

What is claimed is:

1. A system for positioning a tool head with respect to a component platform, comprising:
  - a frame;
  - 5 a tool head connected to the frame, the tool head being adjustably positionable in X and Y directions with respect to the frame;
  - a component platform connected to the frame, the component platform being adjustably positionable in X and Y directions with respect to the frame; and
  - 10 an optical system positionable to simultaneously view the tool head and the component platform.
2. The system of Claim 1, wherein the tool head comprises a soldering / desoldering tool head.
3. The system of Claim 1, wherein the tool head comprises a component positioning head.
- 15 4. The system of Claim 1, wherein the tool head comprises a printing head.
5. The system of Claim 1, wherein the component platform comprises a printed circuit board holder.

6. The system of Claim 1, further comprising:  
a first positioning screw for moving the component platform in the X  
direction; and  
a second positioning screw for moving the component platform in the Y  
5 direction.
7. The system of Claim 6, wherein the first and second positioning screws  
are manually adjustable.
8. The system of Claim 7, wherein the screw pitch ranges from 20 to 100  
turns per inch.
- 10 9. The system of Claim 1, further comprising:  
at least one positioning rod for moving the tool head in the X direction;  
and  
at least one positioning rod for moving the tool head in the Y direction.
- 15 10. The system of Claim 1, further comprising:  
a first positioning rod connected to the frame;  
a positioning arm which is slidably positionable along the first  
positioning rod; and  
a second positioning rod connected to the positioning arm, wherein the  
tool head is slidably positionable along the second positioning rod.
- 20 11. The system of Claim 10, wherein the positioning arm which is slidably  
positionable in the Y direction along the first positioning rod, and the tool head is  
slidably positionable in the X direction along the second positioning rod.

12. The system of Claim 1, further comprising:  
a first pair of positioning rods connected to opposite sides of the frame;  
a pair of positioning arm which are each slidably positionable along one  
of the first pair of positioning rods; and  
5 a second pair of positioning rods spanning between the positioning arms,  
wherein the tool head is slidably positionable along the second pair of positioning  
rods.
13. The system of Claim 1, wherein the optical system comprises:  
a camera; and  
10 a beam splitter, the beam splitter being movable to a position such that  
the camera simultaneously views the tool head and the component platform  
through the beam splitter.
14. The optical system of Claim 13, wherein the beam splitter is retractable  
such that it can be moved away from a location between the tool head and the  
15 component platform, thereby permitting the tool head to be moved to a position  
adjacent the component platform.
15. The system of Claim 1, further comprising:  
a printed circuit board positioned on the component platform.

16. A method of aligning the position of a tool head with respect to a component platform, wherein the tool head and the component platform are both connected to a frame, and wherein the tool head and the component platform are both individually adjustably positionable in X and Y directions with respect to the frame, comprising:
- 5 positioning the tool head while the component platform is maintained at a fixed location; and then
- positioning the component platform while the tool head is maintained at a fixed location,
- 10 while simultaneously viewing the positions of the tool head and the component platform with an optical system positioned between the tool head and the component platform.
17. The method of Claim 16, wherein positioning the tool head comprises moving the tool head in both the X and Y directions with respect to the frame.
- 15 18. The method of Claim 17, wherein the tool head is positioned manually.
19. The method of Claim 16, wherein positioning the component platform comprises moving the component platform in the X and Y directions with respect to the frame.
20. The method of Claim 19, wherein the component platform is positioned manually.
- 20 21. The method of Claim 20, wherein the component platform is positioned by rotating a plurality of adjustable positioning screws.

22. The method of Claim 1, wherein simultaneously viewing of the positions of the tool head and the component platform with an optical system positioned between the tool head and the component platform comprises:
- 5 positioning a movable beam splitter between the tool head and the component platform; and
- viewing through the beam splitter with a camera.
23. The system of Claim 16, wherein the tool head comprises a soldering / desoldering tool head.
24. The system of Claim 16, wherein the tool head comprises a component
- 10 positioning head.
25. The system of Claim 16, wherein the component platform comprises a printed circuit board holder.
26. A system for positioning a tool head with respect to a component platform, while viewing the alignment of the tool head with respect to a
- 15 component platform, comprising:
- a manually positionable tool head;
- a manually positionable component platform; and
- an optical system which simultaneously views the positions of the tool head and the component platform.

27. A method of aligning the position of a tool head with respect to a component platform, comprising:

positioning the tool head while the component platform is maintained at a fixed location; and then

5 positioning the component platform while the tool head is maintained at a fixed location,

while simultaneously viewing the positions of the tool head and the component platform.

28. The method of Claim 27, wherein the tool head and component platform  
10 are both positioned manually.